

Mercer County 2019 INVENTORY, APPRAISAL & INSPECTION SNAPSHOT

Inventory Data - NBIS Bridges Only

	<u>NBIS COUNT</u>
NBIS Bridges > 20'	259
Bridges 10'-20'	123
	382

*Possible NBIS length errors 1

Item 221	Inspection Responsibility	<u>CODE</u>	<u>COUNT</u>	<u>%</u>
	County	3	259	100.0%
Item 21	*Maintenance responsibility			
	County	3	258	99.6%
	City or other local	4	0	0.0%
	Railroad	6	0	0.0%
	Private	7	0	0.0%
	Combination	8	0	0.0%
	ODNR	A	1	0.4%
	Park District	C	0	0.0%
	Township	F	0	0.0%
			259	100.0%
Item 42A	*Type service on bridge			
	Other	0	0	0.0%
	Highway	1	258	99.6%
	Railroad	2	0	0.0%
	Ped/Bikeway	3	0	0.0%
	Hwy/RR	4	1	0.4%
	Hwy/Ped	5	0	0.0%
	RR Abnd. rails rem'vd	A	0	0.0%
			259	100.0%
Item 42B	*Type service under bridge			
	Hwy w/ or w/o Ped	1	0	0.0%
	Railroad	2	1	0.4%
	Ped/Bkwy	3	0	0.0%
	Hwy w/ RR	4	0	0.0%
	Waterway	5	258	99.6%
	Hwy/Waterway	6	0	0.0%
	RR/Waterway	7	0	0.0%
	Relief (RR w/o tracks)	9	0	0.0%
			259	100.0%

ITEMS	Structure Type (Items 43A, 43B, 43C)	CODE	COUNT	%
	concrete slab simple	111	1	0.4%
	concrete slab continuous	112	2	0.8%
	concrete beam simple	121	78	30.1%
	concrete beam continuous	122	1	0.4%
	concrete box beam simple	131	4	1.5%
	concrete frame simple	171	4	1.5%
	concrete culvert filled	195	1	0.4%
	prestressed conc. beam simple	221	43	16.6%
	prestressed conc. box beam simple	231	109	42.1%
	prestressed conc. box beam continuous	232	3	1.2%
	steel beam simple	321	9	3.5%
	aluminum culvert filled	695	1	0.4%
	steel truss (pony)	34A	3	1.2%
			<u>259</u>	<u>100.0%</u>

Item 92A	*Fracture Critical	CODE	COUNT	%
	fracture critical member	Y	3	1.2%
	fracture critical member	N	250	96.5%
			<u>253</u>	<u>97.7%</u>
	No. of steel trusses and girders	3 34x, 36x	3	

6 Blank FC Codes

Item 113	Scour	CODE	COUNT	%
	Bridge not over waterway	N	1	0.4%
	unknown foundation	U	0	0.0%
	over tidal waters	T	0	0.0%
	foundations on dry land	9	106	40.9%
	stable above footing	8	139	53.7%
	countermeasures installed	7	0	0.0%
	no scour evaluation made	6	0	0.0%
	stable within footer limits	5	13	5.0%
	stable action needed	4	0	0.0%
	scour critical - unstable	3	0	0.0%
	scour critical - scour present	2	0	0.0%
	scour critical - failure imminent	1	0	0.0%
	scour critical - bridge failed	0	0	0.0%
			<u>259</u>	<u>100.0%</u>

Scour Photos done?

Item 92B Underwater	CODE	COUNT	%
requires dive inspection	N	253	97.7%
requires dive inspection	Y	0	0.0%
dive inspection dates		1	0.4%
		253	98.1%

6 Blank Dive Codes

Item 709 Plan Information	CODE	COUNT	%
no plans	0	0	0.0%
plans available	1	259	100.0%
field information	2	0	0.0%
not applicable	N	0	0.0%
		259	100.0%

Item 63 *Documented Engineering Judgment	COUNT	%
Field Eval & Doc EJ	1	0.4%
Rating Code in Error D and F	0	0.0%

BR_100 for these bridges?

Item 580 Deep Culverts (depth of fill)	COUNT	%
Culvert fill>6.5'	0	0.0%

Items 195 Culvert vs 171 Frame (Items 43A, 43B, 43C)	COUNT	%
# that do NOT meet the 2' Rule	0	0.0%

Item 63 *Method of Analysis	CODE	COUNT	%
Field Eval & Doc. Eng Judgment	0	1	0.4%
Load testing	4	0	0.0%
No Rating done	5	0	0.0%
Load Factor (LF)	6	181	69.9%
WS or AS	7	23	8.9%
Load & Resistance Factor	8	54	20.8%
Assigned Rating (LFR) HS20	D	0	0.0%
Assigned Rating (LRFR) HL93	F	0	0.0%
Not applicable (Ped, RR, Bldg)	X	0	0.0%
		259	100.0%

REMINDER:

Load Factor required for bridges built after 1993 (with certain exceptions)
LRFR required for bridges built after 2010

Inspection Condition Data - NBIS Bridges Only

Item 41	*Operating Status	CODE	COUNT	%
	Open, No restriction	A	257	99.2%
	Open, posting recommended	B	0	0.0%
	Open, Half width construction	C	0	0.0%
	Open because of temporary fix	D	0	0.0%
	Open using temporary structure	E	0	0.0%
	New struture not yet open	G	0	0.0%
	closed for load capacity reason	K	0	0.0%
	Posted for load capacity	P	2	0.8%
	Posted for other than load	R	0	0.0%
	Closed for other than load	X	0	0.0%
			259	100.0%

General Appraisal		CODE	COUNT	%		
GOOD	30.9%	9 Excellent	9	10	3.9%	
		8 Very good	8	21	8.1%	
		7 Good	7	49	18.9%	
FAIR	66.0%	6 Satisfactory	6	152	58.7%	
		5 Fair	5	19	7.3%	
POOR	3.1%	4 Poor	4	8	3.1%	
		3 Serious	3	0	0.0%	
		2 Critical	2	K	0	0.0%
		1 Imminent Failure	1	K	0	0.0%
		0 Closed	0	K	0	0.0%
			259	100.0%		

FHWA Performance Measures

Performance	% Deck Area		Lowest of GA or Deck	COUNT	Deck s.f
GOOD	43.5%	2.3%	9 Excellent	7	9,198
		10.4%	8 Very good	17	41,757
		30.8%	7 Good	54	124,116
FAIR	53.4%	47.0%	6 Satisfactory	152	189,252
		6.4%	5 Fair	21	25,573
POOR	3.2%	3.2%	4 Poor	8	12,684
		0.0%	3 Serious	0	0
		0.0%	2 Critical	0	0
		0.0%	1 Imminent Failure	0	0
		0.0%	0 Closed	0	0
100.0%		100.0%		259	402,580

Items	AGE of BRIDGES	(Items 27, 106)	YEAR (built or rehab)	COUNT	
			-1900	0	0.0%
			1901-1910	0	0.0%
			1911-1920	0	0.0%
			1921-1930	0	0.0%
			1931-1940	0	0.0%
			1941-1950	0	0.0%
			1951-1960	1	0.4%
			1961-1970	4	1.5%
			1971-1980	12	4.6%
			1981-1990	50	19.3%
			1991-2000	87	33.6%
			2001-2010	87	33.6%
			2011-2020	18	6.9%
				<u>259</u>	<u>100.0%</u>

Load Rating Errors	COUNT
GVW is incorrect	2
Item 708 Software shows no calcs but RFs are calculated	1
% Legal > 150%	6
Missing Tiems in Legal Loads	1
Legal Load RF should not be equal to each other except when Method of Rating = 0,4,5 or metal culverts	2

Load Ratings Due	COUNT
SHV due end 2020 DONE	
SHV Load Ratings Due end 2020	
EV Load Ratings DONE	
EV Load Ratings Due end 2022 ON HOLD	
EV Load Ratings needed because of data	

(C)	Compliant
(SC)	Substantially Compliant
(CC)	Conditionally Compliant (Adhering to approved plan of corrective action)
(NC)	Not Compliant

METRIC 6 Insp. Frequency Routine

Bridge Inspections Overdue	ACTUAL COUNT	% COMPLIANT	COMPLIANCE
NBIS - 24 months	0	100.0%	(C)
ORC - Calendar Year	0	100.0%	(C)
BIM - 18 months	0	100.0%	(C)

METRIC 8 - Insp. Frequency Underwater

Dive Inspections Overdue	ACTUAL COUNT	% COMPLIANT	COMPLIANCE
60 months	0	N/A	(C)

METRIC 10 - Insp. Frequency FC Member

FC Inspections Overdue	ACTUAL COUNT	% COMPLIANT	COMPLIANCE
24 months	0	100.0%	(C)

METRIC 13 - Load Rating

Type of Metric check	Need for compliance	# Not Rated	% of NBIS Rated	COMPLIANCE
Deck, Super, Sub, Culvert Summary <=4	100%	0	100.0%	(C)
Operating Status = D or E	100%	0	100.0%	(C)
FC=Y	100%	0	100.0%	(C)
Operating Status = P or R	100%	0	100.0%	(C)
Bridges with no restrictions	100%	0	100.0%	(C)

***METRIC 14 - Post or Restrict**

Bridge posting/closing Follow-through	COUNT	% COMPLIA NT	COMPLIANCE
Bridges below 10% legal but not closed	0	100.0%	(C)
Operating Rating Factor = 0 but not closed	0	100.0%	(C)
Bridges < 100% legal but not posted (OpStatus =A or R)	0	100.0%	(C)
Bridges to be posted but aren't (Op Status code B)	0	100.0%	(C)

METRIC 22 - Inventory (partial review)

Structure Length	ACTUAL COUNT	COMPLIANCE
Number of bridges with length or span difference	0	depends on sample size
*Culvert Span		
unusually long steel culvert spans	2	depends on sample size
*Location		
Item 9 Location	0	depends on sample size
missing coordinates	0	depends on sample size

PRELIMINARY FHWA 23 Metric Matrix

23 metrics used by FHWA to measure NBIS compliance

Compliance Codes for the following Metrics:

- (C) Compliant
- (SC) Substantially Compliant
- (CC) Conditionally Compliant (Adhering to approved PCA)
- (NC) Not Compliant

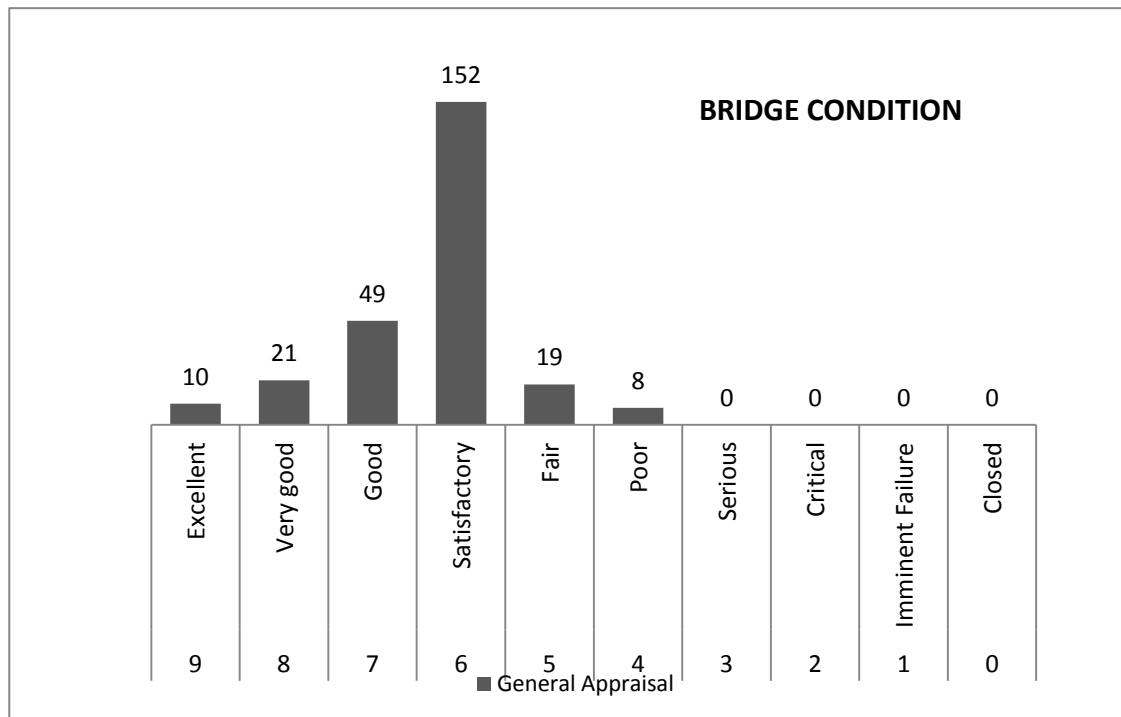
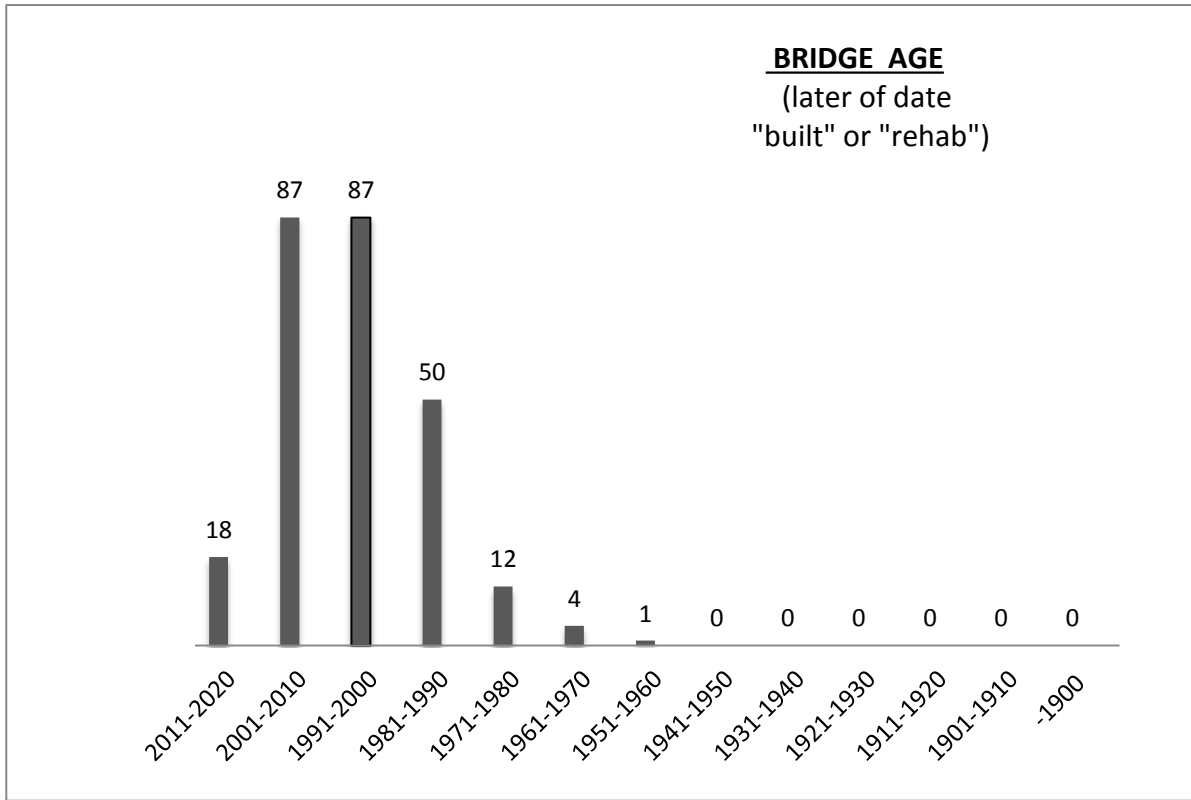
Metric	Description	(C)	(SC)	(CC)	(NC)
1	State Bridge Inspection Organization				
2	Program Manager Qualification				
3	Team Leader Qualification				
4	Load Rating Engineer Qualification				
5	UW Bridge Inspection Diver Qualification				
6	Routine Inspection Frequency - Low Risk				
7	Routine Inspection Frequency - High Risk				
8	UW Inspection Frequency - Low Risk				
9	UW Inspection Frequency - High Risk				
10	FC Inspection Frequency				
11	Frequency Criteria				
12	Inspection Quality **				
13	Load Rating				
14	Posted or Restricted Bridges				
15	Bridge Files				
16	FC Bridges				
17	UW inspection procedures				
18	Scour Critical Bridges				
19	Complex Bridges				
20	QC/QA				
21	Critical Findings				
22	Inventory **				
23	Updating of Data				

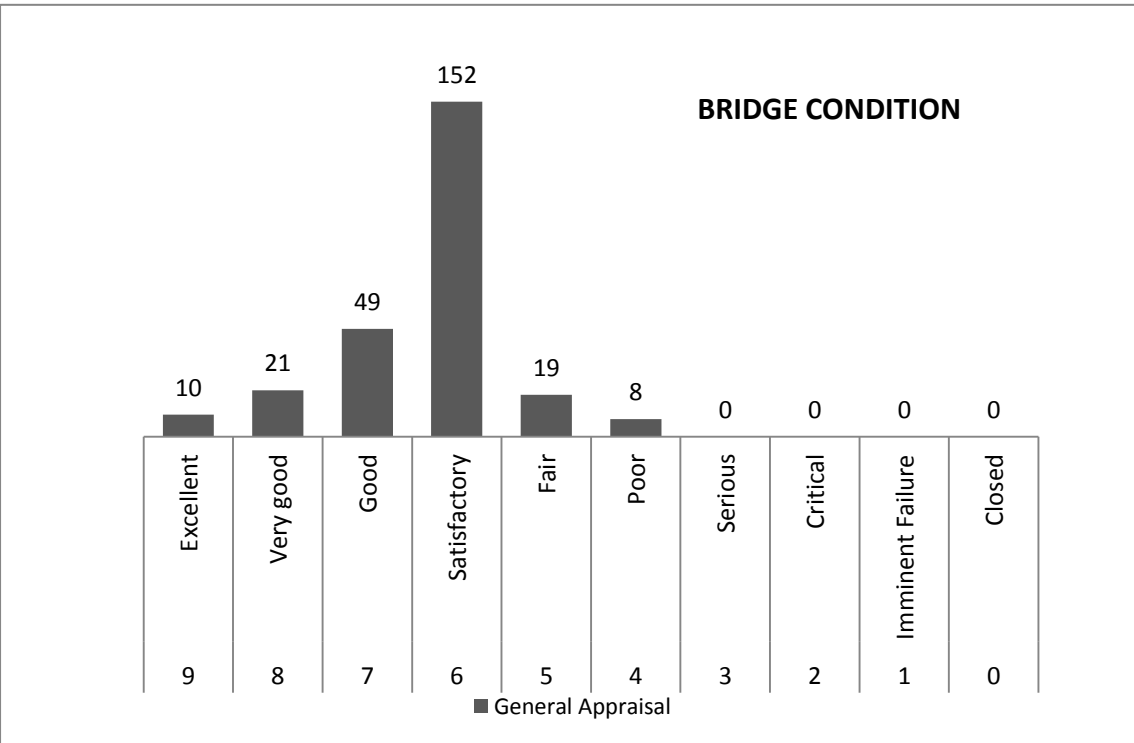
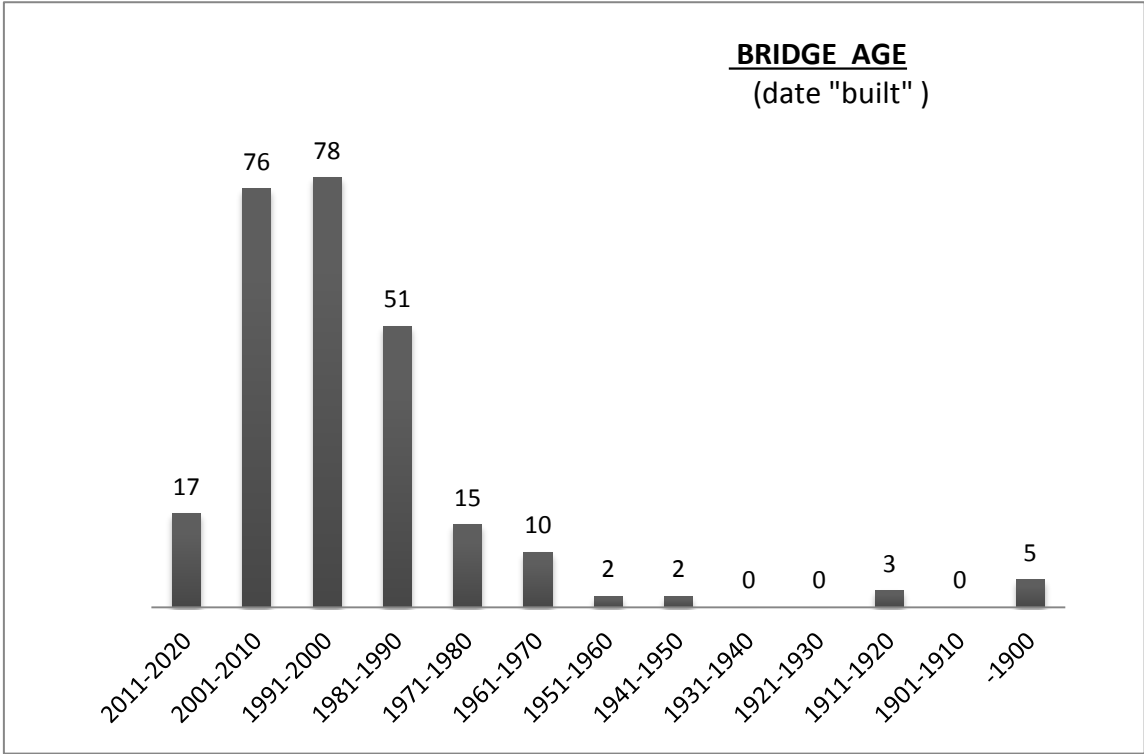
** based on results of Field Review

Metric	Action Needed

AGE VS. CONDITION

Overall Shape of AGE and CONDITION graphs typically mirror each other





GENERAL APPRAISAL COMPARISON

